INTERPHASE ECHO 200™

LCD Fishfinder

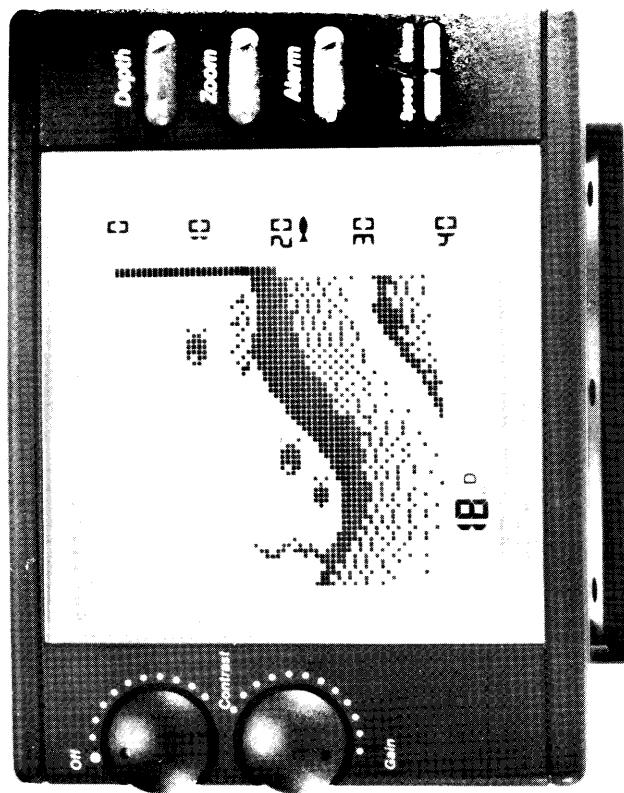# Operation Manual

INTERPHASE
TECHNOLOGIES

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To Our Customer:

Thank you for choosing the **Interphase Echo 200**." Throughout the development of this fine product, we have been primarily concerned with creating a unit that offers the best possible value for your money. Selection of features, ease of use, superior performance and outstanding reliability were the benchmarks upon which all important design decisions were made. We feel proud of the **Echo 200** and your satisfaction is very important to us. To this end, we welcome any comments or suggestions that you might have in regard to this equipment.

It is very important that you complete the **WARRANTY REGISTRATION CARD** and return it as soon as possible.

Sincerely,

INTERPHASE TECHNOLOGIES

General Information

Congratulations on your selection of the **Interphase Echo 200** series of LCD fishfinders. The **Echo 200's** ruggedly built, compact design makes it ideal for installation on nearly any boat. It will display water depth, bottom conditions and submerged objects such as fish on its high resolution SuperTwist Liquid Crystal Display (LCD). The **Echo 200ST** model includes a speed/temperature transducer which will allow the **Echo 200ST** to display digital boat speed and surface water temperature in addition to depth information.

The fishfinder can be purchased either as a depth only unit (**Echo 200**) or as a full function unit that measures and displays depth, boat speed and surface water temperature (**Echo 200ST**). In addition, purchasers of the depth only unit can upgrade their unit to the same functionality as the **Echo 200ST** at any time simply with the purchase of the speed/temperature transducer. See your dealer or call **Interphase** for details.

The **Echo 200** and **Echo 200ST** also includes many advanced features to make your fishing more productive such as split screen **Zoom**, **Bottom Lock**, and **Large Digit Data** modes. In addition, the **Echo 200** includes a unique feature called **Fish Alert** that will show suspected underwater fish echoes as fish symbols on the display.

To ensure that you receive the maximum benefits available from the outstanding features of the **Interphase Echo 200**, carefully follow the steps outlined in this manual. An instructive simulator program has been designed into the **Echo 200** and we highly recommend that you spend some time using it prior to actual use. We also recommend that you read this entire manual before attempting to either install or operate your **Echo 200**. By doing so, you will become familiar with the parts, proceedures and practices neceessary to provide you with many valuable hours of use. We also recommend that you read this entire manual before attempting to either install or operate your **Echo 200**. By doing so, you will become familiar with the parts, procedures and practices necessary to provide you with many valuable hours of use.

Warranty Information

Interphase Technologies provides a limited one-year warranty on the **Echo 200** and **Echo 200ST** depth sounders. We strongly urge you to read this warranty (reprinted at the back of this manual) and closely follow its terms and conditions should your **Echo 200** require repair.

We strongly recommend that should you experience a problem with your **Echo 200** you first call **Interphase** and ask to speak to our **Customer Service Department** at **(408) 427-4444**. We will be more than happy to try and assist you on the phone and if required will give you instructions on how to quickly get your set repaired.

The enclosed warranty registration card must be completed and returned to **Interphase Technologies** within **15 days** of your purchase so that your unit may be protected under the warranty. Failure to return the warranty card may cause unnecessary delays in processing your unit for warranty repair.

Interphase maintains a staff of trained technicians in Santa Cruz who can quickly repair and return your set to its original specifications. We strongly recommend that for the fastest service, if your set does require repair, you send it direct to **Interphase** and not return it to the dealer. If you do need to return your set to **Interphase** for repair, please fill out and include the last page of this manual to speed the repair.

Principle of Operation

The **Echo 200 LCD Depth Sounder,** which acts as both a transmitter and receiver, uses the principle of sonar to effectively determine the distance and density of objects such as fish, underwater matter and bottom conditions below your boat.

First, the transmitter converts a small amount of electrical current from your battery into ultrasonic sound pulses which are fed into the transducer or sounding unit. These pulses are transmitted into the water in a cone shaped pattern, called the cone angle. When the sound pulse strikes an underwater object it is reflected back (echo), received through the transducer, and converted back into electrical impulses. These impulses are then displayed as an image on the LCD display.

The **Echo 200** then calculates the time difference between the transmission and return of each pulse, thus determining the depth of the detected object. Echoes are electronically sorted by strength or density; the LCD screen displays these sorted echoes in a variety of shapes, and sizes to give you an accurate depiction of what lies below your boat.

The strength of the echo, the depth of the object, and the angle of the transducer's beam all affect how the image appears on the screen. Other factors which affect the image include boat speed relative to the movement and position of the displayed image and the number of objects reflecting the pulses back to the **Echo 200.** Learning to properly interpret the depth sounder takes both patience and experience.

Installation

Main Unit

The compact size of the **Echo 200** allows for easy installation in most any vessel. To get maximum performance and life from your unit, the following guidelines should be considered when selecting a mounting location:

1) Select a location where the unit is protected from excessive temperature. Heat is one of the worst enemies of electronic components, and will accelerate component aging, thereby reducing the trouble-free life of your **Echo 200.**

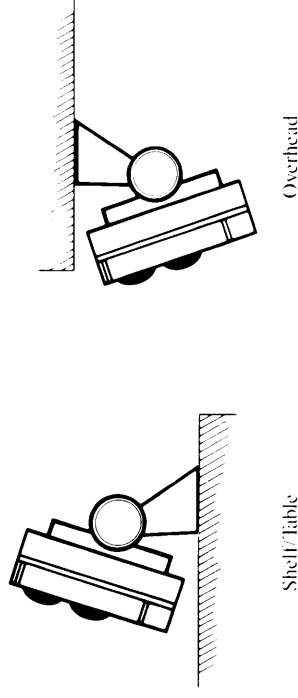2) Mount the display in a location where it will be convenient to route the power and transducer cables.

Shelf/Table   Overhead

Figure 1

Power Connection

Connect the two-pin plug on the end of the power supply cable to the power supply jack located at the rear of the main unit. Connect the red wire to the positive terminal and the black wire to the negative terminal of your boat's 12 VDC battery (*Figure 2*).

To minimize electrical interference, carefully route the power cord so that it does not run parallel or close to the transducer cable, engine, refrigeration, bilge pump or any other critical wiring.

IMPORTANT: The **Echo's** 12 VDC power leads should go directly to the boat's battery, distribution board, or breaker panel. Instability of the display may result if the unit has to share leads with other electrical systems aboard your boat.

Transducers

The Echo 200 and Echo 200ST are supplied with a transom mount transducer which provides continuous depth display and information. The Echo 200ST version also provides speed and temperature data. If, at a later date, the Echo 200 is to be upgraded to the same functionality as the Echo 200ST, a speed/temperature transducer can be purchased and installed at that time. The following section deals with the procedures for proper installation of the transom mount transducer.

IMPORTANT: If you would like to upgrade your Echo 200 depth only model to the same functionality of the Echo 200ST, you can do so at any time by purchasing a speed/temperature transducer element. Please ask your Interphase Dealer or call Interphase's Accessory Sales Department at (408) 427-4444 for further information.

Transducer location and installation is very important for optimum performance of your Echo 200, especially at high boat speeds. In general the transducer should be located in an area that is as free from water turbulence as possible. In addition the following considerations should be observed:

1) Choose a location where there is the least amount of acoustic noise, air bubbles or turbulence caused by the boats movement. The transducer should not be located nearby or behind the propeller.

2) The transducer should always remain submerged regardless of the speed of the boat and should not be mounted where it could be damaged by underwater obstacles or when loading on a trailer.

3) DO NOT locate the transducer in the bow of the boat where it will be subject to intense turbulence as the boat pounds in a sea-way.

4) DO NOT locate the transducer directly behind any hull protrusion which will cause the water to be turbulent when it reaches the transducer. For displacement hull power boats, an inside-hull or thru-hull installation is best. For high speed planing hulls, the transducer should be well aft and close to the keel so it remains in the water.

DANGER: DO NOT allow any solvents, i.e. gasoline, acetone, to come in contact with the transducer or head unit as this may dissolve the material.

DANGER: The standard transom mount transducer includes 25' cable. DO NOT shorten this cable. If it needs to be longer, we recommend the use of Interphase extension cables available in 10', 20', and 30' lengths. DO NOT attempt to remove and reconnect the 8-pin plug on the transducer cable.
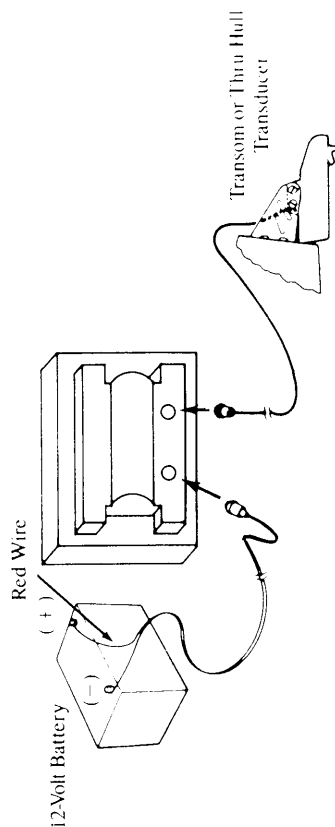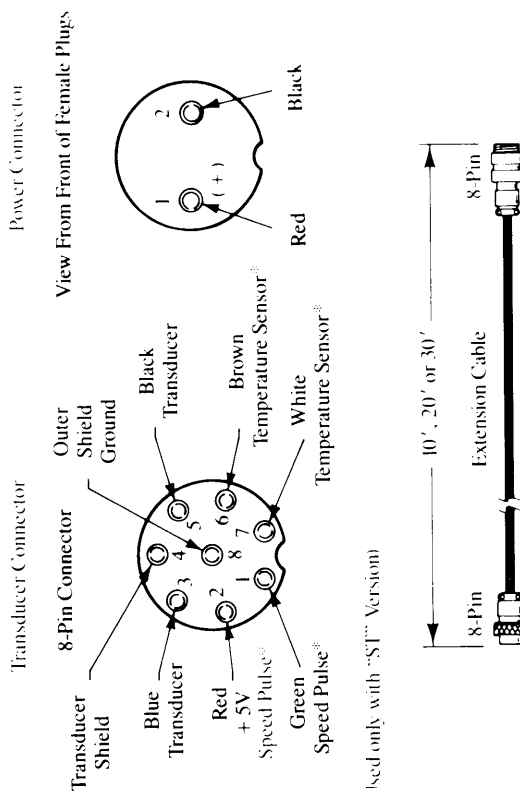
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12-Volt Battery   Red Wire   (+)   (−)   Transom or Thru Hull Transducer

Figure 2

Wiring for Power & Transducer Connectors

The correct pin-out wiring sequence for the power and transducer connectors are shown in *Figure 3*. If a cable longer than that supplied with your unit is needed, contact your **Interphase Technologies** dealer. **Interphase Technologies** extension cables are available in 10, 20 and 30-foot lengths.

DANGER: Removal of any connector, disassembly of transducer, shortening of any cable, or use of any cable other than that supplied by **Interphase Technologies** may void your warranty.

Transducer Connector

8-Pin Connector   Outer Shield Ground   Black Transducer   Brown Temperature Sensor*   White Temperature Sensor*

Transducer Shield   Blue Transducer   Red +5V Speed Pulse*   Green Speed Pulse*

Power Connector

View From Front of Female Plugs

2   1 (+)   Red   Black

(*Used only with "ST" Version)

8-Pin   Extension Cable   8-Pin

10', 20' or 30'

Figure 3

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Transom Transducer Installation

1) Assemble the transducer to the bracket as shown in *Figure 4*. (Note: transducer shown is **Echo 200ST** (speed/temp version.)
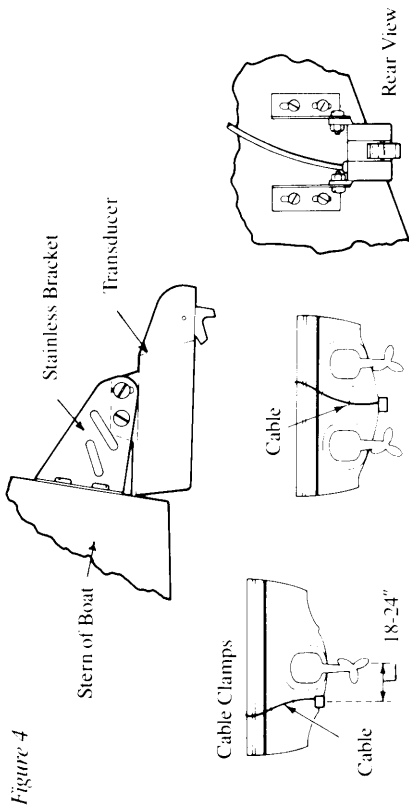
Figure 4

2) Choose a mounting location where the transducer will always remain submerged and out of the way of trailer loading.

3) The transducer can be installed on either side of an outboard or inboard/outboard engine, or between twin outboards. For single engine installations, normally 18" to 24" outboard of the propeller center line is acceptable and the upswing side is preferred. However, as a rule of thumb, mounting close to the prop, 4" from the outer swing may be acceptable depending on your hull type. Choose a location where water flow is smoothest. For dual engine installation, just off the center line is acceptable.

IMPORTANT: If you have an inboard motor, transom mount transducers should not be used and you should contact **Interphase's Accessory Sales Department at (408) 427-4444** for additional information.

4) Make sure that the angle between the face of the transducer and the waters surface does not exceed 10 degrees. The leading edge projection of the triducer wedge should be 1/8" to 1/4" below the hull for optimum performance and clear echo presentation. Align the trailing edge to be 1 to 2 degrees below the leading edge. This is recommended so that the "bottom face" of the transducer always has a positive pressure when the boat moves through the water. Try a few higher speed runs to test operation of the transducer. It may be necessary to slightly adjust the transducer angle up or down for optimum results.

5) Route the transducer cable separate from other electrical wiring in order to help prevent interference.

IMPORTANT: On the "ST" version, the paddlewheel impeller assembly's speed range is 0.5 knots to 60 knots. It is made to be removable to simplify replacement and maintenance. The paddlewheel impeller assembly incorporates shear pins which break away in the event of impeller impact, leaving the main depth housing intact. If you should lose the impeller assembly, replacements are available through your dealer or contact **Interphase Technologies Accessory Sales Department.**

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Operation

Your **Echo 200** (or **Echo 200ST**) has been carefully designed to be as easy to use as possible, however, we suggest that you take time to carefully read through this section of the manual prior to attempting to use the unit on the water. The **Echo 200** includes a built-in simulator which makes it easy to practice with the unit and get a feeling for its many features before actually using it in real situations on the water.

Note: The operation of the **Echo 200** and the **Echo 200ST** is identical except that the **Echo 200ST** includes boat speed and surface water temperature readouts. For simplicity, the following descriptions of the **Echo 200** functions also apply to the **Echo 200ST**).

Operation of the Keypad (Softkeys)

You will notice in *Figure 5* below, the **Echo 200** has only four keypad buttons, yet the **Echo 200** has an amazing number of advanced capabilities. The most often used features such as **Depth Range** changes, **Zoom**, and **Alarm** adjustments can be made directly with the keypad. Each of the keys are labeled to identify its function. In addition, the **Echo 200** has a **Menu** screen that allows you to select additional features such as **Fish Alert** (shows suspended fish targets as fish symbols), the display **Backlight**, and **Large Digits**. When the **Menu** is displayed the four keypad buttons are used to select your choice of features. When the **Menu** is displayed each of the possible choices has an arrow on the display pointing to the keypad button to push. In this mode, the keypad buttons are functioning as **"Softkeys".** (The unit's operating software is using the display to re-define the operation of the keypad buttons.)

This unique approach allows for very easy operation even though the **Echo 200** has an amazing number of advanced features, it almost guides you along. It would take a considerable number of additional buttons and greatly add to the operational complexity if each function had a dedicated button instead of using the **Echo 200's "Softkey"** approach.

Although the "**Softkey**" approach is new and different, we think that after you have used it a few times you'll agree that it makes the **Echo 200's** operation very simple, almost not requiring the use of this manual.
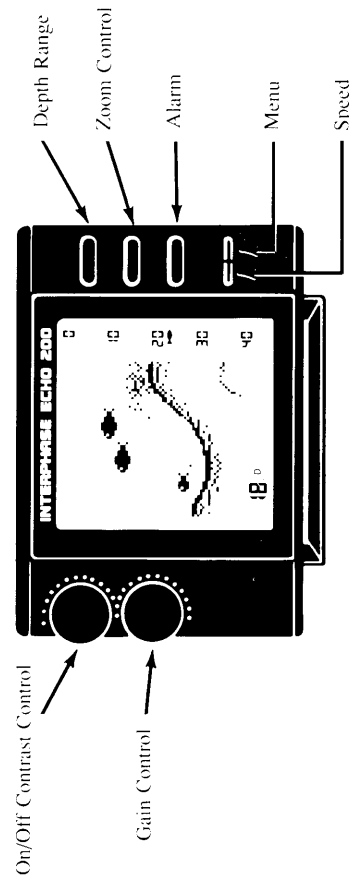

Figure 5—Echo 200 has only 4 keypad buttons

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Select Units—U.S., Nautical or Metric

The Echo 200 always starts in the "US" mode unless you decide to change the units of measure on the opening screen. By pressing the button indicated on the display, you can choose between US, Nautical, and Metric modes. The current choice is shown in "reverse" (light letters on a dark background) on the display. The choices and results are as follows:

U.S. Mode

Item	Units	Symbol
Depth	Feet	Ft
Boat Speed	Miles Per Hour	MPH
Water Temperature	Degrees Fahrenheit	°F

Nautical (Naut) Mode

Depth	Fathoms (6 Feet)	Fa
Boat Speed	Knots	Kt
Water Temperature	Degrees Fahrenheit	°F

Metric (Met) Mode

Depth	Meters	M
Boat Speed	Knots	Kt
Water Temperature	Degrees Centigrade	°C

Demonstration Mode

Once you have decided to operate the Echo 200 in the US mode, or have decided to change units to Metric (MET) or Nautical (NAUT), you can choose the Demo mode by pressing the button indicated on the opening display. We highly recommend that you first operate the unit in the Demo mode prior to using the Echo 200 to familiarize yourself with its many advanced features and how they will appear on the display.

If you push the button indicated for Demo, the unit will start and if no additional buttons are pushed, will automatically run through a complete demonstration of its features. If left on, it will continue to repeat the run through of all its features. You can press any button during the Demo mode to use the unit in a simulation mode—to manually change depth ranges or choose any of it features. If you do not push any buttons for over 10 seconds, the unit will return to its automatic Demo mode, again running through all of its features.

All of the Echo 200's features, with the exception of the Gain control and Auto Ranging are available in the Demo mode. Speed and temperature are displayed as they would appear on the Echo 200ST model. The pictures shown in the Demo mode are a representation of what you might see on your Echo 200 under certain conditions. In actual use the picture you will get will vary significantly depending on bottom depth, bottom conditions, speed of your boat and many other conditions.

You can Exit the Demo mode at any time by turning the unit off and back on again using the On/Off Contrast knob at the upper left corner of the unit.
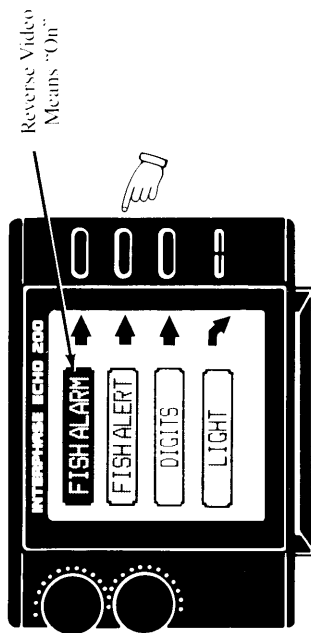
Reverse Video Means "On"

Figure 6—Echo 200 uses "Softkeys"

On/Off Contrast Control

The On/Off Contrast control is conveniently located to the left of the LCD screen in the upper left corner of the unit. Turn the knob clockwise to turn on the Echo 200, you should feel a "click" and the Echo 200 will respond with an audible "beep" when turned on correctly. If your unit does not respond with a "beep", check that the 12 VDC power is correctly connected to the unit and the fuse is not blown.

To adjust the contrast of the display for the best picture, simply continue to rotate the knob clockwise until you obtain the best picture. In general, this should occur when the knob is rotated about half way through its range.
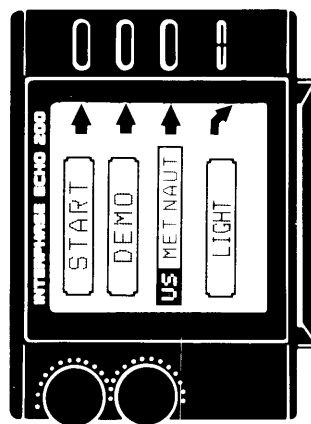

Figure 7 - The Opening Display Screen

The Opening Display

When you turn on the Echo 200 it first shows an "opening display". The opening display, shown above gives you the choice of either starting your Echo 200 in the normal operating mode (Start), to choose which of three possible units of measure is to be displayed US, Nautical (NAUT), or Metric (MET), or to start the unit in a Demo mode. To select your choice, simply push the button indicated next to the display.

Start

If you choose not to view the internal **Demo** program, press the button indicated next to the **Start** message. The **Echo 200** will then start in its normal operating conditions, depending on which units of measure were choosen. When first starting, the unit will always start on the 0-40 feet, 0-8 fathom, or 0-8 meter Depth Range (depending on the units selected).

Turn Off

To **Turn** off the **Echo 200**, rotate the **Contrast Control** counterclockwise until a "click" is heard.

Gain Control

The **Echo**'s **Gain Control** is located on the left side of the unit just below the **On/Off Contrast Control**. Rotating the knob clockwise increases the sensitivity; rotating the knob counterclockwise decreases the sensitivity.

Proper adjustment of the **Gain** is important to obtain accurate displays of underwater objects. Too little gain will cause a loss of weak signals and too much gain will cause too much noise to appear on the screen making it difficult to see the small targets through the noise. Because returning echo signals are generally weaker when coming from greater depths, the optimum **Gain** settings will often change with changing depth conditions. As a general rule, less **Gain** is required in shallow water, more **Gain** is needed at greater depths. Once you become familiar with the effect of the **Gain** controls on the display, you should have no difficulty adjusting it properly.

To adjust the **Gain**, turn the **Gain Control** clockwise until the bottom echo on the display is shown as a solid line. Continue to carefully rotate the knob until "noise" appears on the display (much like "snow" on a TV). Then carefully rotate the knob counterclockwise until the noise just disappears. This is the optimum **Gain** control level. For locating fish, especially at greater depths, you will always want to use the maximum level of **Gain** possible. In shallow waters, when locating the bottom is more important than finding fish, or when surface turbulence generates a lot of noise just beneath the surface, you may want to decrease the **Gain** more than normal so that you reduce the amount of noise and other objects cluttering the screen.

Understanding the Echo 200's Display

The **Echo**'s large LCD display shows a graphic picture of the water beneath the boat plus many other items of important information such as the **Digital Depth**. (And with the "**ST**" version **Digital Boat Speed** and **Digital Water Temperature**). Please take a minute to review the picture below illustrating the location of these items of information. See *Figure 8* below.
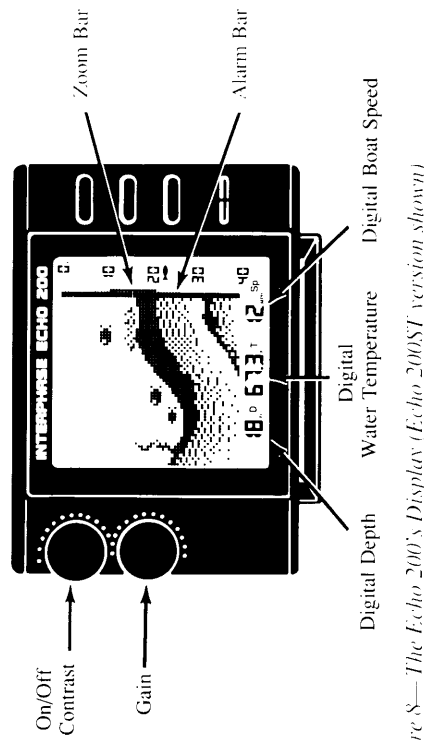
Zoom Bar

Alarm Bar

Digital Boat Speed

Digital Water Temperature

Digital Depth

On/Off Contrast

Gain

Figure 8— The Echo 200's Display (Echo 200ST version shown)

Changing the Depth Range

When the **Echo 200** is first turned on, the depth range is set at 0-40 feet, 0-12 meters, or 0-8 fathoms, depending on the display units chosen on the opening screen. To change the Depth Range, press either side of the button labeled "**Depth**". If you press the side with the up symbol (∧) the depth range will decrease (more shallow) and if you press the side with the down symbol (∨) the depth range will increase (deeper). Each time you press the button the **Echo 200** will "beep" and you can see the new depth scale numbers on the right side of the LCD display. See *Figure 9* below:
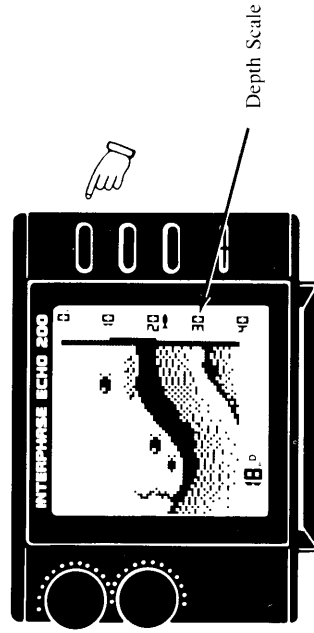
Depth Scale

Figure 9—Changing the Depth Range

The **Echo 200** offers seven depth ranges to choose from:

US Mode	Nautical Mode	Metric Mode
0-10 Feet	0-2 Fathoms	0-3 Meters
0-20 Feet	0-4 Fathoms	0-6 Meters
0-40 Feet	0-8 Fathoms	0-12 Meters
0-80 Feet	0-16 Fathoms	0-24 Meters
0-160 Feet	0-32 Fathoms	0-48 Meters
0-320 Feet	0-64 Fathoms	0-96 Meters
0-640 Feet	0-128 Fathoms	0-192 Meters

Zoom

The **Echo 200** has a very powerful, easy to use **Split-Screen Zoom** feature. The **Zoom** feature allows close inspection of any 25% segment of any depth range, so you can get a **4X magnification** of fish or bottom conditions. When this feature is used, the display continues to show the original depth data on the right side of the display and shows the **"Zoomed"** display on the left.

To activate the **Zoom** feature, press **Down** symbol (∨) on the button labeled **"Zoom"** and a small vertical bar will appear at the top of the right side of the display and the display will split to show the **"Zoomed"** area on the left side of the display. As you hold down the button, the vertical **"Zoom"** bar will move downwards to allow you continuously adjust the **"Zoomed"** area. Use the **Up/Down Zoom** button to position the **"Zoom"** bar next to the area you wish to expand and view the results on the left side of the split screen display. The right side of the display continues to show the original display. See *Figure 10* below.
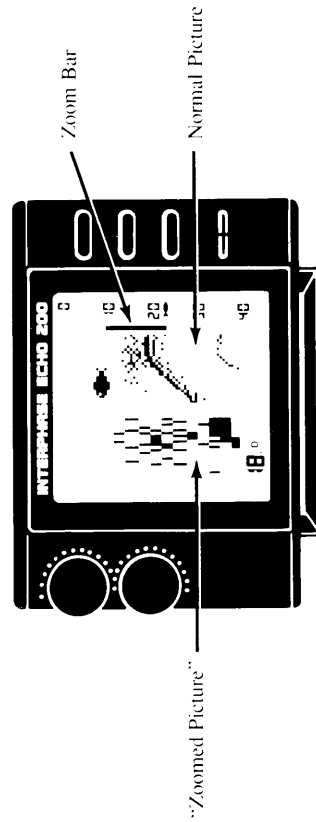

Figure 10 Echo 200 Zoom Feature

"Zoomed Picture" — Zoom Bar — Normal Picture

You can exit the **Zoom** mode as follows:

1. Press and hold the **Zoom Up** (∧) button until the "zoom" bar moves to the top of the screen and disappears.
2. Choose any other function requiring a split screen (Large Digits).

Bottom Lock

The **Bottom Lock** feature provides an expanded view of the fish and other targets just off the bottom on the left side of the screen, while continuing to show the normal picture on the right. **Bottom Lock** is a very powerful feature to help find fish and other objects close to the bottom, especially when the bottom is uneven and/or rocky. It eliminates most of the guesswork about whether your observing an object on the bottom such as a rock, or if you're seeing fish or other suspended objects. See *Figure 11* below.
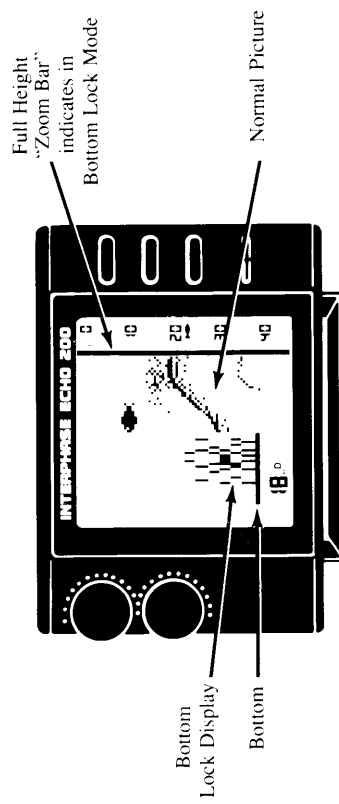
Full Height "Zoom Bar" indicates in Bottom Lock Mode — Normal Picture — Bottom Lock Display — Bottom

Figure 11—Echo 200 Bottom Lock Feature

To enter the **Bottom Lock** mode. Hold down the **Down** side of the **Zoom** button until the "Zoom" vertical display bar moves to the bottom of the display. The **Echo 200** will then "beep" and the "Zoom" vertical display bar will expand from top to bottom on the display—indicating that the **Echo 200** is now in the **Bottom Lock Mode.**

In the **Bottom Lock** mode the left side of the screen shows the expanded view from the bottom upwards and the right side will continue to show the normal view from the surface down.

The **Bottom Lock** range is equal to 25% of the Depth Range. If, for example, you are on the 0-40 foot depth range, the **Bottom Lock** display will show 25% of the 0-40 foot range which is 10 feet above the bottom. Similarly, on the 160 foot range, the **Bottom Lock** display will show 25%, or 40 feet above the bottom.

You can exit the **Bottom Lock** mode as follows:

1. Hold down the **Zoom Up** (∧) button until the vertical "zoom" bar moves to the top of the screen and disappears.
2. Choose any other split screen function (such as Large Digits).

Auto Ranging

With the **Auto Ranging** feature, the **Echo 200** will adjust the depth range automatically. This feature allows you a virtual "hands free" operation for those times when you anticipate random changes in the bottom depth. The **Echo 200** will select the optimum depth range setting, up or down, as the bottom depth changes. When the **Auto Ranging** feature is used, the area of the display from the bottom line and below will be solid dark.

To turn on **Auto Ranging**, press the **Depth** key (∇) down to the deepest range, 0-640 feet, then push once more. The **Echo 200** will cycle up to the proper range for your current depth, stop there, and then will be ready to adjust automatically to any changes of depth range.

WARNING: In the **Auto Ranging** mode, when in 3 feet or water or less the **Echo 200** will toggle back and forth between ranges because a depth this shallow is usually insufficient for a distinct bottom reading.

To Exit the **Auto Ranging** mode, simply press the **Depth** key (∆) or (∇) once again.

Alarms

The **Echo 200** includes two alarm features — an **Adjustable Alarm** that can be set to sound on fish, submerged objects or shallowing bottom conditions and a **Fish Alarm** that will only sound on targets interpreted by the **Echo 200** as fish and will not sound on shallowing bottom conditions.

To activate the **Adjustable Alarm**, press and hold the **Down** (∨) side of the button labeled "Alarm". The **Echo 200** will sound a "beep" and you will see a vertical bar appear from the top right side of the display and move downwards.

Any large targets (including the bottom) that pass through the **Alarm Display Bar** will cause the **Alarm** to sound. You can use the **Up** (∧) and **Down** (∨) sides of the **Alarm** button to readjust the setting of the **Alarm Bar** as required.

To remove the **Alarm**, press and hold the **Alarm Up** (∧) button until the **Alarm Bar** on the right side of the display moves to the top of the screen and finally disappears indicating that the **Alarm** is **Off**.
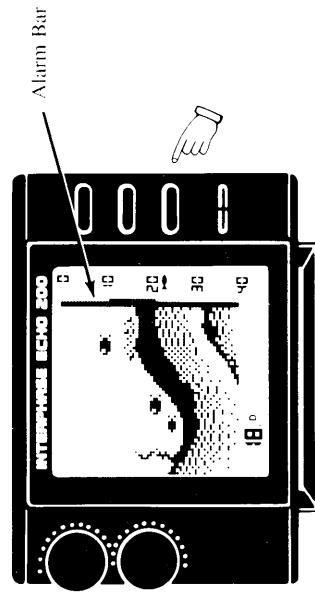

Alarm Bar

Figure 12 Echo 200 Adjustable Alarm

Display Scrolling Speed

The **Echo 200** has three selectable screen speeds that control how fast the picture moves from right to left. When the **Echo 200** is first turned on, the display is always set at the fastest speed. To choose one of the other display speeds simply press the button labeled "**Speed**". Each time you press the "**Speed**" button, the display changes to the next level. If you start on the fastest speed, it will change with each button push as follows:

> Fastest speed, then
> Freeze, then
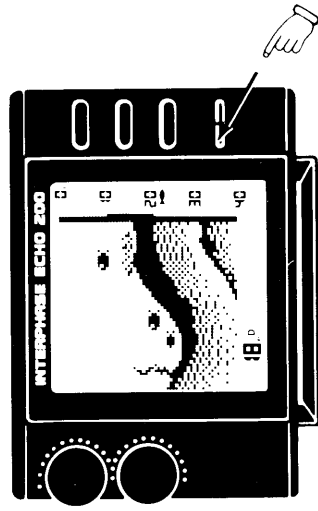> Slowest speed, then
> Fastest speed, etc.

Figure 13—Display Scrolling Speed Selection

Menu

The **Echo 200** also includes several other features, many not found on other fishfinders including **Fish Alert** (a simple method of identifying fish), **Fish Alarm** (which will only sound on targets suspected of being fish), and **Split Screen Large Digits**, which shows the **Digital Depth** (and with the **Echo 200ST** version, the **Digital Boat Speed** and **Surface Water Temperature**) in jumbo size, easy to read digits on the left side of the display while still showing the graphic bottom picture on the right side.

Press the button labeled **Menu**. The display will change to show you several choices of features. To select any of the features, simply press the button indicated by the arrows on the right side of the display. When a feature is selected by pressing the button indicated, the feature will be highlighted by a "**reverse video display**" (light letters on a dark background). If a feature is not selected, the letters will be dark on the light background). Thus, you can see at a glance which features you have selected.

Fish Alert

To turn **On** the **Fish Alert**, press the button indicated on the display when in the **Menu** mode. When this feature is turned on, **Fish Alert** will be shown with light letters on a dark background (reverse video) and a fish symbol will appear in the upper right of the display screen.

When the **Fish Alert** is turned **On**, the **Echo 200's** microprocessor looks carefully at the returning echos from the water and tries to identify echos that are probably fish. It then shows a **Fish Symbol** on the display, allowing you to concentrate on fishing and not trying to evaluate whether your fishfinder is showing you arches, dots, or blobs. The microprocessor shows what it thinks as larger fish as larger **Fish Symbols** and smaller fish as smaller **Fish Symbols**. If the **Echo 200's** microprocessor doesn't think a target is a fish, it will show on the display as it would have without the **Fish Alert** feature. This is a significant improvement over many other fishfinders that will show any target off the bottom as a fish.

IMPORTANT: The **Fish Alert** feature will not work unless the range selected displays the bottom.
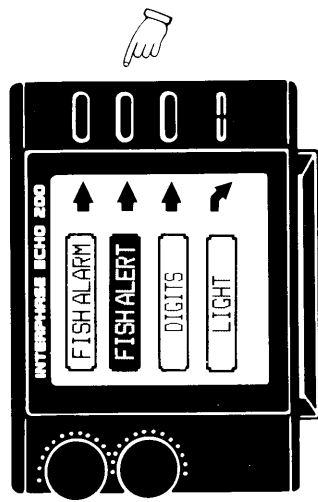
Fish Alarm

If the **Fish Alarm** feature is selected, the **Echo 200** will "beep" whenever its microprocessor thinks it sees a fish. This alarm is usefull when the bottom depth is rapidly changing and you don't want the **Echo 200** to sound on the bottom but only on suspected fish targets. To turn the **Fish Alarm On**, push the button indicated. **Fish Alarm** will then appear as light letters on a dark background indicating that this function has been turned **On**. To turn the **Fish Alarm Off**, again push the button indicated and **Fish Alarm** will return to dark letters on the light background indicating the feature has been turned **Off**.
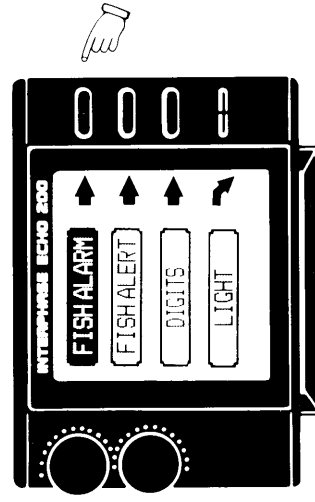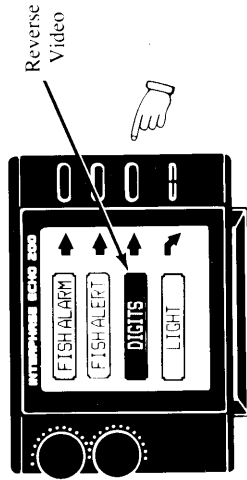
Figure 15—Echo 200 Fish Alert Feature

Figure 16—Fish Alarm

Large Digits

If you press the indicated button, "**Digits**" will appear in reverse video (light letters on a black background) indicating the feature has been turned **On**.

In the **Digits** mode, the **Echo 200's** screen will split and the left side of the screen will show the **Digital Depth** (and with the **Echo 200ST** version the **Digital Boat Speed** and **Surface Water Temperature**) in large easy to read digits while the right side of the display continues to show a graphic image of the bottom and fish targets. (**Note:** for the **Digital Depth** to work the bottom must be visible on the display.)

To turn **Off** the **Large Digits** feature, press the indicated button and **Digits** will return to dark letters on a light background indicating the feature has been turned **Off**.

Display Backlight

The **Echo 200's** LCD display includes a **Backlight** that can be turned **On** during low light conditions. When the **Echo** is first turned on the backlight also comes **On**, but after approximately 20 seconds automatically turns itself **Off** to conserve power supply current and extend the life of the backlight bulbs.

To turn **On** the **Backlight**, go to **Menu** and press the button indicated. When the **Backlight** is **On** the word **Light** appears in reverse video (light letters on a dark background).

To turn **Off** the **Backlight**, go to **Menu** and press the button indicated. When the **Backlight** is **Off** the word **Light** appears in normal dark letters on a light background.
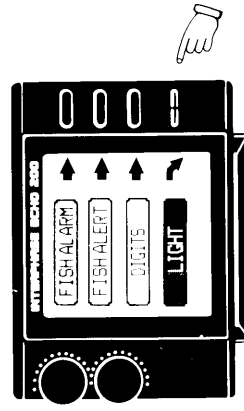
Reverse Video

Figure 17

Figure 18 Turning on/off the Backlight

Maintenance

The **Echo 200** has been designed to provide reliable, trouble-free performance for years. Follow the maintenance tips below to ensure your **Echo 200** remains problem-free.

1) Keep your **Echo 200** clean and dry. Occasionally wipe unit off with a damp cloth, but be careful not to scratch the LCD screen. For stubborn dirt, use a mild soap and a damp cloth. NEVER USE SOLVENTS SUCH AS PAINT THINNER, ACETONE, OR GASOLINE TO CLEAN YOUR **Echo 200.**

2) Occasionally clean the face of the depth transducer (sensing surface) and carefully remove any marine growth. Use a mild detergent or fine sandpaper to remove stubborn growth.

3) If the in-line fuse is blown, replace it with a 2-amp fuse. NEVER REPLACE WITH A HIGHER AMP RATING! If the fuse continues to blow, check the polarity of your 12 VDC power source. If the polarity is correct, check with **Interphase Technologies Customer Service Department at (408) 427-4444.**

Troubleshooting Guide

Problem	Solution
Unit will not turn on.	Check fuse, battery voltage and power connections.
Unit beeps but no picture appears.	Check your connections to the transducer.
Unit blows fuses.	Wiring is reversed or there is excessive current from the battery.
Loses picture at speed.	Adjust the transducer angle.
Speed display is erratic.	Check and clean the impeller wheel and the surrounding area—be sure the impeller wheel spins freely.
Digital water depth not working.	Increase your gain, and check that you are in the proper depth range.
LCD bleeds out in sunlight after prolonged use.	Over exposed to the sunlight—provide shading for display.
Screen is full of noise, or has dots running through it.	Reduce your gain setting and review the section on interference.

Interference Problems

Interference can come from several sources. The most common of these are:

1) Other nearby depth sounders operating at the same frequency.

2) Radiated interference from the boat's electrical system (alternator, distributor, and spark plugs), or from nearby equipment that radiates electrical noise.

3) Conducted interference usually occurs when the **Echo 200** shares 12 VDC power leads with other noisy equipment (i.e., bilge pumps, motors, refrigeration systems, autopilots, etc.)

Interference caused by nearby depth sounders operating on or near the same frequency as the **Echo 200** will typically appear as "rabbit tracks" that march up and down the screen. Reducing the Gain will help minimize this problem.

Radiated interference caused by the boat's engine can usually be identified by observing the **Echo 200** with both the engine running and turned off. If the interference disappears when the engine is turned off, its safe to assume the engine is the source of the interference.

This type of interference can usually be eliminated by using the same techniques used in the automotive industry to eliminate interference to car radios, CBs, etc. The following actions may be required:

1) Reduce the Gain to minimize interference.

2) Make sure your boat uses resistor-type spark plugs and plug wiring.

3) Install a suppressor on the center lead of the distributor.

4) Install an alternator filter to smooth the alternator's output signal.

Interference may also be caused by radiation from other nearby equipment and can be detected by turning off all other equipment and observing the **Echo 200** display as each suspected source is turned back on. This type of interference can usually be eliminated by moving the **Echo 200** away from the source and checking to ensure that the interfering source is properly grounded.

Interference causing the display to be unstable, to pulsate or periodically change size is usually caused when another piece of equipment shares the same 12 VDC power leads from the battery. This problem is especially severe when equipment requiring large current surges (i.e., autopilots, refrigerators, or bilge pumps) shares the same power leads. Minimize this type of interference by running the **Echo 200's** 12 VDC power leads, or those of the interfering equipment, directly to the battery.

Your authorized marine electronics dealer is familiar with the methods of reducing electrical interference and is qualified to assist you should a problem persist.
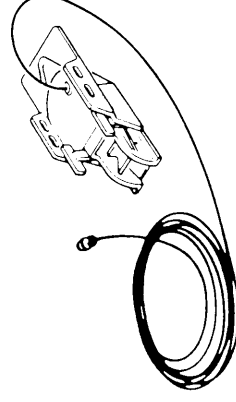
26

Specifications
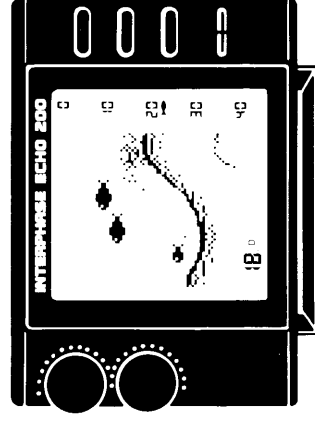
Power Cable

Echo 200ST
triducer
(speed, temp., depth)
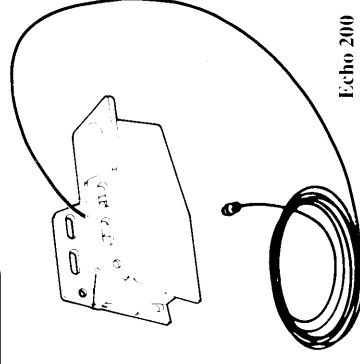
Echo 200
transducer
(depth only)

|	
Display Type:	64 x 64 Pixels 4,096 SuperTwist LCD, 3 1/2" x 3 1/2"
Transmit Frequency:	200 kHz.
Basic Depth Ranges:	0 to 10 feet 0 to 20 feet 0 to 40 feet 0 to 80 feet 0 to 160 feet 0 to 320 feet 0 to 640 feet
Zoom Ranges:	Variable Zoom allows any 25% of any depth range to be displayed across the entire screen.
Pulselength and Sounding Rates:	Automatically optimized for selected range.
Transmitter Power:	100 watt RMS (800 watts peak to peak).

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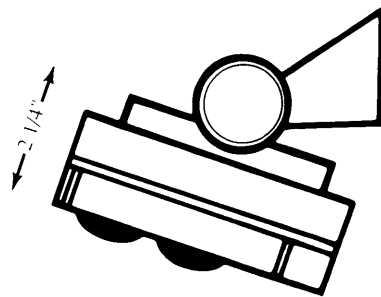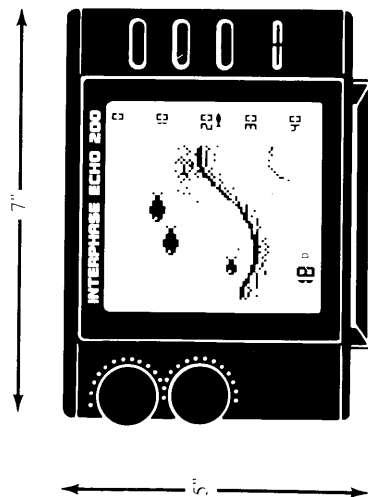
Most Asked Questions About the Echo 200

Q. When in very shallow waters, why does the **Echo 200** seem to give erratic digital depth readings?

A. Depth sounders, operating on the principle of sonar or echo readings, have to transmit and receive signals and then compute the data for display on your screen. In order to operate, there is a time delay between transmitting and receiving. In waters under four or five feet the signal and echo may be too close together to accurately provide true depth readings.

Q. The **Echo 200** displays depth ranges down to 0-640 feet. Why does my unit only show readings to about 500 feet?

A. Factors influencing depth range include uniformity of water temperature, clarity, salinity and bottom condition. Also, remember that for deeper depths you may need to increase your gain slightly.

Q. What should the boat voltage be for optimum performance?

A. Approximately 13.6 VDC. If your voltage is frequently above 15 VDC, it is recommended to check your engine's voltage regulator or install a voltage regulator on the power line.

Q. How fast can my boat speed be and still receive a good picture on my **Echo 200**?

A. The narrower the beam angle of your transducer, the higher speed you can travel and still retain a good picture. Also affecting the quality of picture at speed are transducer mounting and transducer alignment. With proper transducer installation, you may keep a good picture at approximately 35 mph.

Q. Why did my **Echo 200** not mark fish that were being caught in various areas around my boat?

A. Aside from proper gain setting, the beam angle of your transducer and the depth of the fish in the water are factors to consider. The signal from your transducer builds out. almost like a flashlight beam, as it travels further away. If fish are off to the side of your boat and at relatively shallow depths, they may not enter within your beam angle and not mark on your display.

Q. When I used my **Echo 200**, why did it not show the speed and temperature like in the simulation mode?

A. Remember that the speed and temperature data are available in the **Echo 200ST** model. Your **Echo 200** can be upgraded to the same functionality as the "**ST**" with the addition of the speed/temperature upgrade kit. See your dealer or call **Interphase** for details.

Power Requirements: 11 to 15 VDC, less than 0.5 Amp.

Standard Equipment: Display unit, 12 VDC power cable with in-line fuse, mounting bracket with knobs, operation manual, and transom mount transducer.

Specifications subject to change without notice.

7"

5"

2 1/4"

Weight 1.5 lbs.

If you feel your set is not operating properly and you need service, we strongly recommend you first call our friendly Customer Support Group (408) 427-4444 to make sure your set needs to be returned to the factory.

If you do need to return your set, send it to the following address:

Service Department
Interphase Technologies
1201 Shaffer Road
Santa Cruz, CA 95060

In addition, to speed your repair please fill out the following, tear out of this manual, and tape to your unit for our technicians to review.

RETURN TO: _____
                         (Name)

_____
(Street Address)

_____ _____ _____
      (City)   (State)   (Zip)

Day Phone (____) _____

Evening Phone (____) _____

Model: **Echo 200** Serial # _____

Purchase Date ___/___/___ In warranty? Yes _____ No _____

Type of transducer: Transom mount _____ Thru-Hull _____ Other type _____

Please describe the problem in as much detail as possible.

_____
_____
_____
_____
_____

INTERPHASE TECHNOLOGIES
LIMITED WARRANTY

Interphase Technologies, Inc. warrants this product to be free from defects in material and workmanship for one year from the date of purchase.

Any unit that fails during the warranty period will, at **Interphase's** option, be repaired or replaced at no charge to the customer provided it is returned to **Interphase**, freight prepaid with proof of date of purchase and a description of the malfunction. Repair or replacement during the warranty period will not extend the basic warranty period.

This warranty does not apply to an **Interphase** product that has failed due to improper installation, misuse, or accident, nor does it apply to products which have been repaired or altered outside the **Interphase** factory unless authorized in writing by **Interphase**.

Any costs incurred with transducer replacement is specifically excluded from this warranty other than the cost of the transducer itself.

This warranty does not include incidental or consequential damages and **Interphase** disclaims any liability for any such damages. All implied warranties, if any, are limited in duration to the above stated one year warranty period. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, therefore, the above limitations may not apply to you. **The completion and return of the enclosed registration card is a condition precedent to the warranty coverage.** This warranty gives you specific legal rights which may vary from state to state and province to province.

This warranty is limited only to the original purchaser of the unit.